In the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

1.   (Currently amended)   A method, comprising:

sensing a manipulation of an articulatable object configured to be coupled to a host computer system that includes a graphical environment;

updating data values associated with at least one of a displayed orientation and a displayed shape of a graphical image in the graphical environment in relation to the sensed manipulation; and

changing a relationship between the sensed manipulation and the at least one of the displayed orientation and the displayed shape of the graphical image based on a simulated interaction of the graphical image with a graphical object; and

calculating one of the displayed orientation and the displayed shape of the graphical image,

wherein calculating includes using a quadratically converging and linearly scalable constraint solver.

2.   (Canceled)

3.   (Currently amended)   The method of claim 21, wherein calculating includes using constraints to calculate the at least one of the displayed orientation and the displayed shape of the graphical image.

4.   (Currently amended)   The method of claim ~~2~~1, wherein calculating includes using numerical methods to calculate the at least one of the displayed orientation and the displayed shape of the graphical image.

5.   (Canceled)

6.   (Canceled)

7.   (Previously Presented)   The method of claim 1, wherein the object is configured to provide haptic feedback.

8.   (Previously Presented)   The method of claim 7, wherein the haptic feedback is associated with the simulated interaction of the graphical image and the graphical object.

9.   (Currently amended)   A method, comprising:

       sensing a manipulation of an articulatable object configured to be coupled to a host computer system including a graphical environment;

       updating data values associated with at least one of a displayed orientation and a displayed shape of a graphical image in the graphical environment in relation to the sensed manipulation; and

       changing a relationship between the sensed manipulation and the at least one of the

displayed orientation and displayed shape of the graphical image by calculating at least one of the

displayed orientation and displayed shape of the graphical image,

wherein the calculating includes using a quadratically converging and linearly scalable

constraint solver.

10.   (Canceled)

11.   (Previously Presented)   The method of claim 9, wherein the object is configured to

provide haptic feedback.

12.   (Previously Presented)   The method of claim 11, wherein the haptic feedback is

associated with a simulated interaction of the graphical image and the graphical object.

13.   (Currently amended)   A method, comprising:

sensing a manipulation of an object configured to be coupled to a host computer system

including a graphical environment;

updating data values associated with at least one of a position and a shape of an

articulated graphical image in the graphical environment based on the sensed manipulation, the

articulated graphical image having a first image portion and a second image portion, the first

image portion being movable with respect to the second image portion;

changing a relationship between the sensed manipulation and the at least one of the

position and shape of the articulated graphical image; and

calculating the at least one of the position and shape of the articulated graphical image,

wherein calculating includes using a quadratically converging and linearly scalable

constraint solver.

14. (Canceled)

15. (Previously Presented)   The method of claim 13, wherein calculating includes

using constraints to calculate the at least one of the position and the shape of the graphical image.

16. (Previously Presented)   The method of claim 13, wherein calculating includes

using numerical methods to calculate the at least one of the position and the shape of the

graphical image.

17. (Canceled)

18. (Previously Presented)   The method of claim 13, wherein the object is configured

to provide haptic feedback.

19. (Previously Presented)   The method of claim 18, wherein the haptic feedback is

associated with a simulated interaction of the graphical image and the graphical object.